

Appl. No. 09/681,953
Amdt. Dated September 14, 2004
Reply to Office action of January 15, 2004

REMARKS/ARGUMENTS

This amendment is responsive to the Office Action mailed June 16, 2004. In the Office Action, claims 12-14 and 16 were rejected under 35 U.S.C. 112 for insufficient antecedent basis for an element; claims 1, 2, 4, 7, 12, and 17 were rejected under 35 U.S.C. 102 (b) as being anticipated by Miki (JP 405334488A); and claims 5, 10 and 16 were rejected under 35 USC 103 (a) as being unpatentable over Miki in view of Thomas (US 4,263,504). Claims 18-20 were deemed allowable. Claims 3, 8, 13 and 14 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Claims 1-5, 7, 8, 10, 12-14, and 16-20 remain pending in this application. Reconsideration in light of the following remarks is respectfully requested.

35 U.S.C. 112 Rejections

Claim 12 has been amended to correct the antecedent basis for "first and second codes", the Applicant respectfully submits that the amended claim 12 complies with 35 USC 112. Support for 'first and second codes' can also be found on Page 5, line 16 of the Applicant's application. Claims 13, 14 and 16 were rejected as being dependent from claim 12, since amended claim 12 is deemed allowable, claims 13, 14, and 16 are similarly allowable. Applicant respectfully requests the withdrawal of rejections under 35 USC 112.

Claims define allowable subject matter over the applied art

Claims 1, 2, 4, 7, 12, and 17 were rejected under 35 U.S.C. 102 (b) as being anticipated by Miki (JP 405334488A). Applicant has carefully reviewed the applied reference, and respectfully traverses the rejection of independent claims 1, 7, 12, and 17, under 35 USC 102 (b) as being anticipated by Miki.

"Anticipation requires the presence in a single prior art reference, a disclosure of each and every element of the claimed invention, arranged as in the claim." Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984).

Applicant respectfully submits that Miki does not disclose, nor does it teach or suggest each element of the present invention as claimed in independent claims 1, 7, 12 and 17. Specifically it does not disclose, teach, or suggest the claim limitations "said two-dimensional redundant bit patterns comprising repeating patterns of a bit string forming a respective machine readable code" as recited in independent claims 1, 7, 12 and 17.

Appl. No. 09/681,953
Amdt. Dated September 14, 2004
Reply to Office action of January 15, 2004

Miki's technique merely discloses forming a human readable character by grouping many identical copies of a small (maybe 2D) pattern (corresponding to a character) within the boundaries of the "human readable" outline of a particular character (Figure 1a). Miki thus uses many copies of the same base pattern *corresponding to the character* grouped so as to form a resulting entity that *resembles the character* (Paragraphs 0007 and 0009 of the machine translated version of Miki's patent application). The pattern that is replicated to form each symbol appears to correspond only to that symbol. For example, based on an information string "abcd", Miki's technique would form four final "symbols". The first "symbol" would be composed of many copies of an underlying pattern that corresponds only to the character "a" and arranged spatially so as to look like the character "a" when printed. The second printed "symbol" would use multiple copies of a pattern that encodes "b" arranged in two dimensions so as to resemble the letter "b". Similarly for "c" and "d".

Miki is completely devoid of any disclosure, suggestion and teaching directed towards building redundancy and using repeating bit patterns to form a machine readable code as described in the Applicant's invention and recited hereinabove with respect to independent claims 1, 7, 12 and 17. The concept of redundancy as used in Applicant's invention is disclosed, for example, on Page 3, line 25 through Page 4, line 19 and implies that the entire string is encoded as a redundant pattern in contrast to character by character encoding of Miki's technique. Thus, for example, in the Applicant's invention a two dimensional arrangement of marks is formed that encodes the original string "abcd" in such a way that portions of the 2D arrangement could be obliterated and the underlying information "abcd" could still be recovered. Human readable equivalent symbols are then formed by using a sequence of spatial templates ("cookie-cutters") each "masking" the same underlying redundant 2D pattern to create the actual symbol to be printed for each original character of the information string.

Thus in the Applicant's application, a single spatially redundant underlying 2D pattern is formed composed of a two dimensional arrangement of marks that encodes the meaning of a string of characters (letters) into the one 2D symbol. The sequence of human readable "cookie-cutter" or "masking" templates (each corresponding in turn to a character of the string) is then used to produce a string of graphical entities each of which appears to a human reader as the characters of the original message string. In a case of obliteration of parts of marks, or when entire marks are missing, Applicant's invention still ensures machine readability due to redundancy. Miki on the other hand does not provide similar redundancy and in case of any obliteration, Miki's technique would be unable to reconstruct the original information string since they do not provide a "redundant" underlying pattern in each symbol that contains the entire message. Thus independent claims 1, 7, 12 and 17 are not anticipated by Miki.

Thus the Applicant respectfully submits that the independent claims 1, 7, 12, and 17 are not anticipated by Miki under 35 USC 102 (b) and therefore, are allowable. Claims 2 and 4 depend directly or indirectly from claim 1, thus claims 2 and 4 are similarly allowable.

Appl. No. 09/681,953
Amdt. Dated September 14, 2004
Reply to Office action of January 15, 2004

Claims 5, 10 and 16 were rejected under 35 USC 103 (a) as being unpatentable over Miki in view of Thomas (US 4,263,504). Applicant respectfully traverses the rejection of independent claims 1, 7 and 12 under 35 USC 103(a) as being unpatentable over Miki in view of Thomas.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.

Applicant respectfully submits, that as explained above, in relation with the 102 argument, Miki does not teach, suggest or disclose the claim limitations of independent claims 1, 7, and 12. Specifically Miki does not teach, suggest or disclose the claim recitations of "said two-dimensional redundant bit patterns comprising repeating patterns of a bit string forming a respective machine readable code" as recited in independent claims 1, 7, and 12. The secondary reference of Thomas merely describes a matrix-type code having repeated or non-repeated dot patterns representing digital characters and a method of reading or scanning the same in a particular direction. Regardless of this disclosure, there is still no teaching, suggestion or disclosure in Thomas leading to the claim limitation of "said two-dimensional redundant bit patterns comprising repeating patterns of a bit string forming a respective machine readable code" as recited in independent claims 1, 7 and 12. Thus a combination of Thomas with Miki, will not yield the applicant's invention as recited in independent claims 1, 7, and 12.

Accordingly, Applicant respectfully submits that the Office Action did not make a prima facie case of obviousness for the independent claims 1, 7, and 12 define allowable subject matter over the applied art. Claim 5 depends directly from claim 1, claim 10 depends directly from claim 12 and claim 16 depends directly from claim 12. Applicant respectfully submits that claims 1, 7, and 12 are patentably distinct from the applied references for the reasons discussed above and that claims 5, 10 and 16 are similarly allowable over the applied references.

In view of the foregoing remarks, Applicant respectfully requests withdrawal of the rejections under 35 USC 102(b) and 103(a).

Appl. No. 09/681,953
Amdt. Dated September 14, 2004
Reply to Office action of January 15, 2004

Summary

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,



Donald S. Ingraham
Reg. No. 33,714

14 September 2004

General Electric Company
Building K1, Room 4A70
PO Box 8
Schenectady, New York 12301

Telephone: (518) 387-5073